Software Requirement Specification

On

Library Management System

Submitted By:

Devi Prasad Mishra

20051958 (C.S.E)

Table Of Contents

1. **INTRODUCTION**

1.1 PURPOSE

- The purpose of this project is to provide a friendly environment to maintain the details of books and library members.
- The main purpose of this project is to maintain an easy circulation system using the computers and to provide different reports.
- The Library System is a package to be used by Libraries to improve the efficiency of Librarians, Library employees and Users.
- The system provides book catalog and information to members and helps them decide on the books to borrow from the library.
- The Librarian can keep the books catalog updated all the time so that the members (students and the professors) get the updated information all the time

1.2 SCOPE

- The document only covers the requirements specifications for the Library Management System.
- This document does not provide any references to the other component of the Library Management System.
- All the external interfaces and the dependencies are also identified in this document.
- The overall scope of the feasibility study is to provide sufficient information to allow a decision to be made as to whether the Library Management System project should proceed and if so, its relative priority in the context of other existing Library Management Technology

1.3 REFERENCES

- Fundamentals of Database System
- Fundamentals of Software Engineering
- Fundamentals of Core Java, Advance Java, Java Swing BY Balguru Sammy.

1. FUNCTIONAL REQUIREMENTS

The Library Management System must have the following functional requirements:

1. The LMS should store all information about librarians and other users (students and faculty members) – their login info, books issued, etc.

2. The LMS should store all information about the books and users in databases.

3. The LMS should allow searching books/journals by author, title, keywords or availability.

4. The LMS should generate request's reports for the librarian, upon which he/she could make decisions about accepting/rejecting the requests.

5. The LMS should allow users to view their personal information and status (numbers of books issued, days left, etc.)

6. The LMS should provide modules to search, request and renew books.

7. The users should be able to view their recent check-ins/checkouts, request/recommend more books, etc.

8. The librarian must be able to add/remove books, manage users, view recommendations from users, etc.

Use case analysis of the different functionalities has been provided in section 5 for better understanding of the system

3. NON-FUNCTIONAL REQUIREMENTS

3.1 Usability Requirements

The user interface should be interactive, simple and easy to

understand. The system should prompt the user and administrator to login to the application for proper input criteria.

3.2 Error Handling

Library management systems shall handle expected and unexpected errors in ways that prevent loss in information and long downtime periods.

3.3 Security Requirements

The LMS should provide databases' modification only for the librarian after proper authorization.

The system shall accommodate a high number of books and users without any fault.

3.4 Software Requirements

1. Database - MYSQL is used as database as it easy to maintain and retrieve records by simple queries which are in English language which are easy to understand and easy to write.

2. Development tools and Programming language- java is used to write the whole code and develop GUI with java Swing and AWT components and Advance Java (JDBC) for backend development.

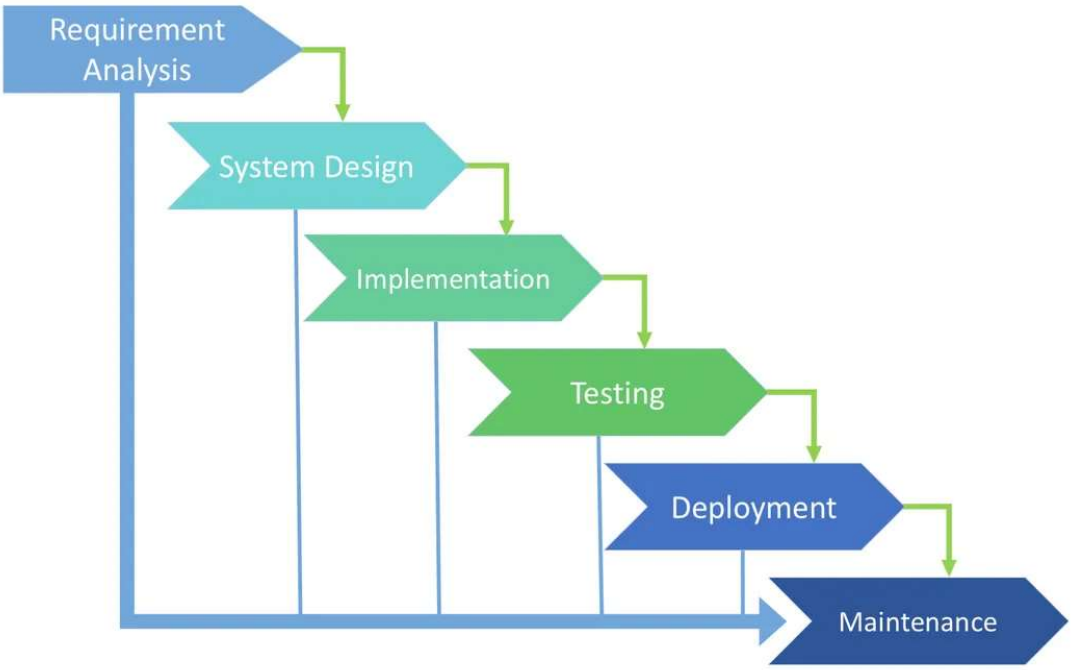
3.5 Hardware Requirements

1. Intel core i5 and above is required for a stable experience and fast retrieval of data.
2. 4 GB RAM is required as it will provide fast reading and writing capabilities which will in turn result in better performance time

4. SDLC Model

Iterative Model.

This model has feedback path which makes it more effective than the classical waterfall model so I have used this model to implement all the works in this project



It consists of five stages:

1. System Requirements:

In this stage, the system services, constraints and goals are established by consolation with system users. It defined in detail and serves as a system specification.

2. System and Software Design:

In this stage, we will conceptualize overall system architecture.in design phase involves fundamental system abstraction and their relationships.

3. Implementation and Unit testing:

In this stage, the software design realized as a set of programs or a program unit. In unit testing we will verify that each unit must meet its specifications.

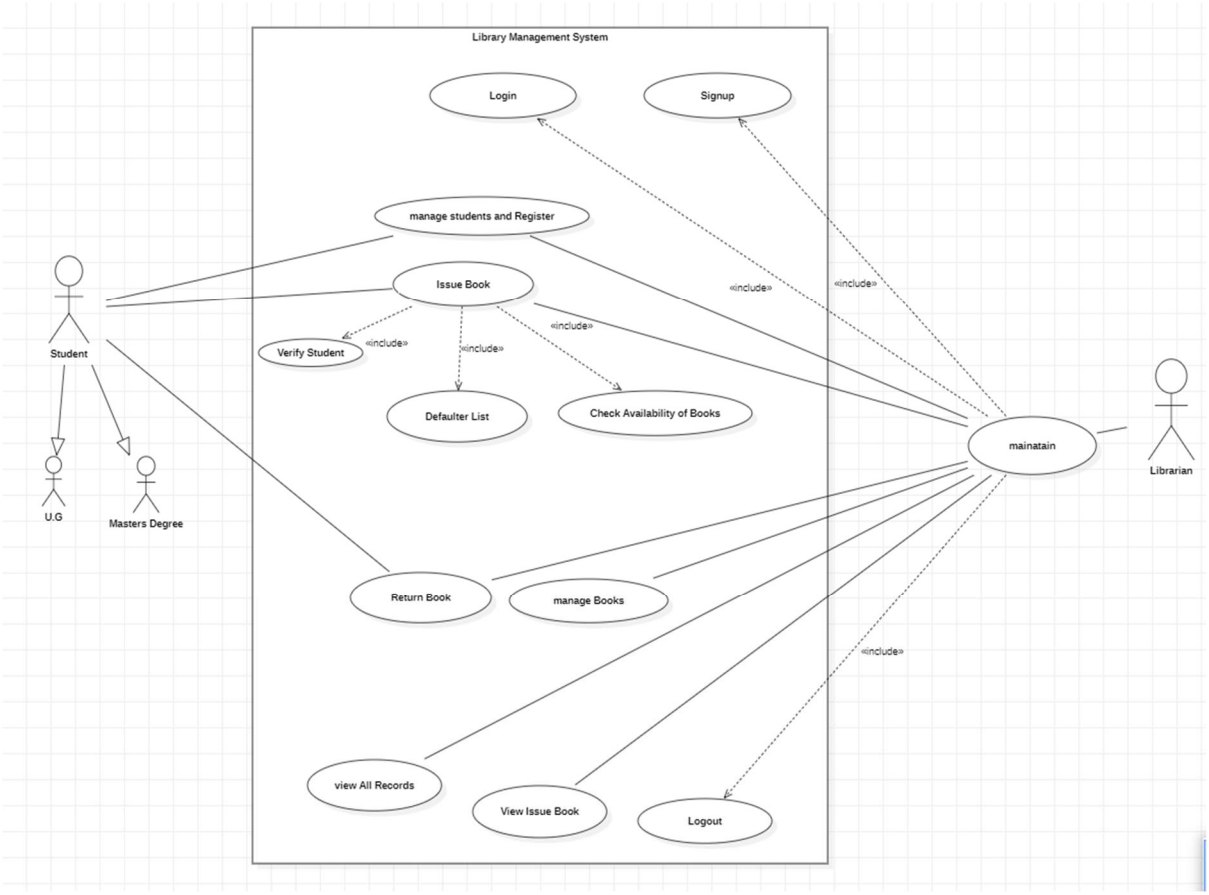
4. Integration and system testing:

In this stage, the system individual program units or programs are integrated and tested to the complete system that ensure software requirement have been met. After testing, the software system developed to the customer.

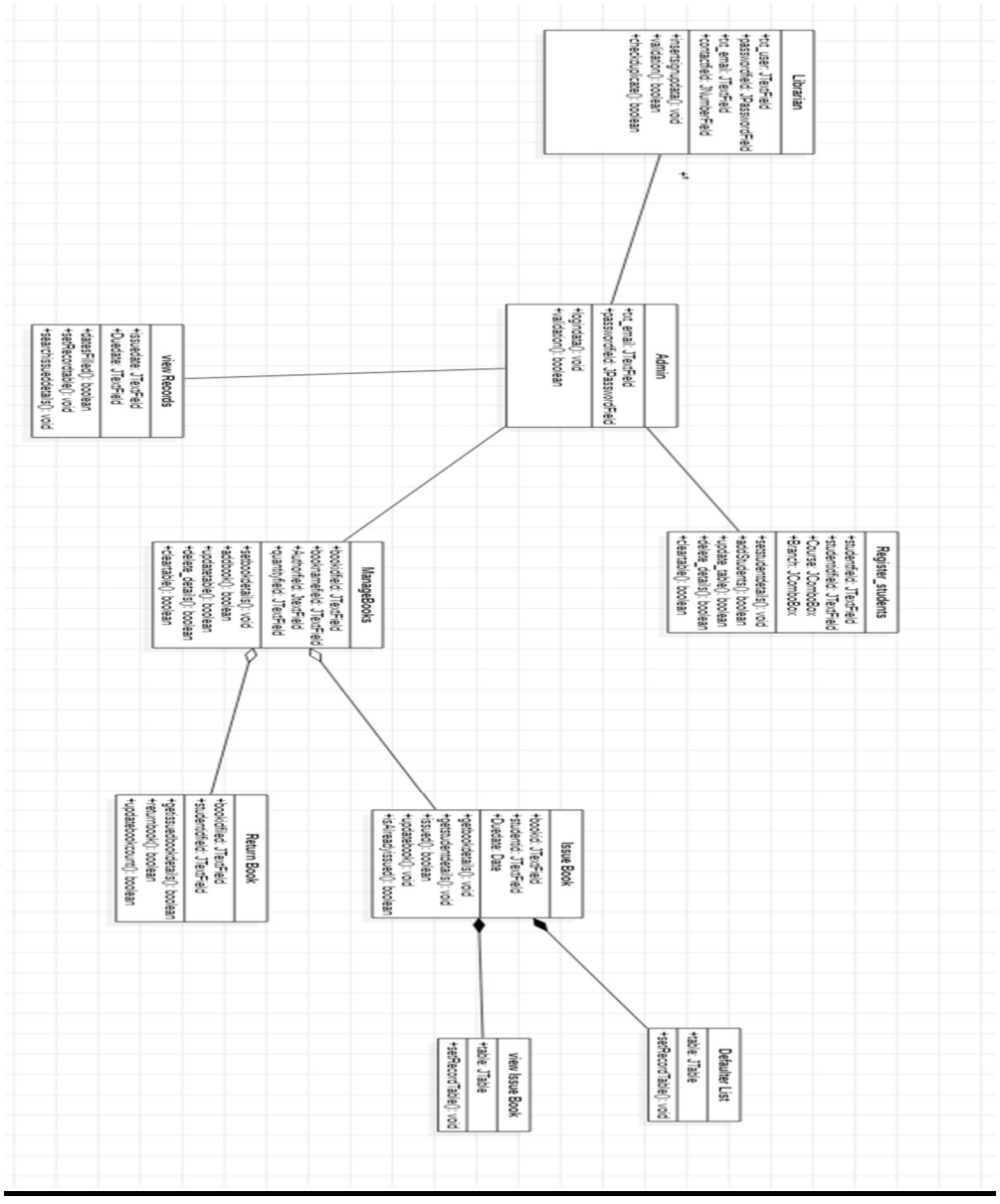
5. Operating and Maintenance:

In this stage, this is the longest phase of software life cycle. Maintenance means correcting errors which were not discovered in earlier stages of development.

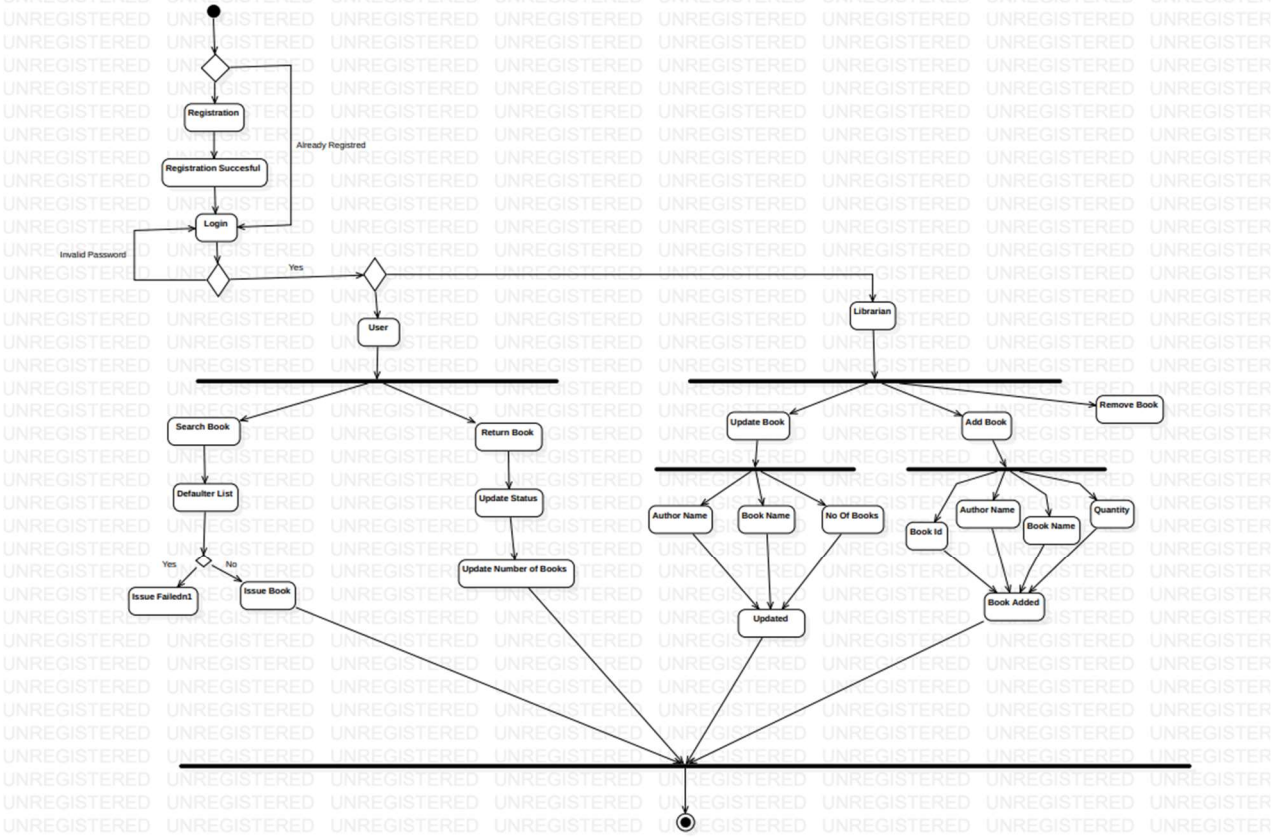
5. Use Case Diagram



6. Class Diagram Analysis



7. Activity Diagram



8. Er Diagram